



**THE MODERATING EFFECT OF NETWORK CENTRALITY ON THE
RELATIONSHIP BETWEEN WORK EXPERIENCE VARIABLES AND
ORGANIZATIONAL COMMITMENT**

THESIS

Luke M. Kaspari, First Lieutenant, USAF

AFIT-ENV-13-M-11

**DEPARTMENT OF THE AIR FORCE
AIR UNIVERSITY**

AIR FORCE INSTITUTE OF TECHNOLOGY

Wright-Patterson Air Force Base, Ohio

DISTRIBUTION STATEMENT A:
APPROVED FOR PUBLIC RELEASE; DISTRIBUTION IS UNLIMITED

The views expressed in this thesis are those of the author and do not reflect the official policy or position of the United States Air Force, Department of Defense, or the United States Government. This material is declared a work of the U.S. Government and is not subject to copyright protection in the United States.

AFIT-ENV-13-M-11

THE MODERATING EFFECT OF NETWORK CENTRALITY ON THE
RELATIONSHIP BETWEEN WORK EXPERIENCE VARIABLES AND
ORGANIZATIONAL COMMITMENT

THESIS

Presented to the Faculty

Department of Systems and Engineering Management

Graduate School of Engineering and Management

Air Force Institute of Technology

Air University

Air Education and Training Command

In Partial Fulfillment of the Requirements for the
Degree of Master of Science in Research and Development Management

Luke M. Kaspari, MBA

First Lieutenant, USAF

March 2013

APPROVED FOR PUBLIC RELEASE; DISTRIBUTION UNLIMITED

AFIT-ENV-13-M-11

THE MODERATING EFFECT OF NETWORK CENTRALITY ON THE
RELATIONSHIP BETWEEN WORK EXPERIENCE VARIABLES AND
ORGANIZATIONAL COMMITMENT

Luke M. Kaspari, MBA

First Lieutenant, USAF

Approved:

John J. Elshaw, Lt Col, USAF (Chairman)

Date

Brent T. Langhals, Lt Col, USAF (Member)

Date

Alfred E. Thal, Jr., PhD, USAF (Member)

Date

Abstract

The purpose of this research was to identify the effect of an individual's network position on the relationship between work experience variables and affective commitment. This study tested three hypotheses, which were introduced through a comprehensive literature review, regarding the relationships between work experience variables and affective commitment. Research has indicated linkages between social network centrality and organizational commitment; however, the specific effects of centrality remain unclear. Therefore, this research developed and tested a moderation model to identify relationships between network centrality, affective commitment, and three work experience variables: psychological empowerment (PE), leader-member exchange (LMX), and perceived organizational support (POS). The moderation results suggest that network centrality significantly influences the relationship between PE and AC as well as POS and AC. While there was an indication that network centrality also influences the LMX – AC relationship, the results shown in this study were found to be insignificant.

Acknowledgments

I would first like to thank God for continuing to bless my life with countless opportunities. Secondly, my wife in no way can ever know the appreciation I have for her in helping me through this chapter of my life. I would also like to thank Lt Col Elshaw for his support as an advisor and challenging me in an academic realm that was unknown to me. Lastly, I would like to thank all of my AFIT friends and classmates. Thank you for making school bearable and even fun along the way.

Table of Contents

	Page
Abstract	iv
Table of Contents	vi
List of Figures	viii
List of Tables	ix
I. Introduction	1
Problem Statement.....	1
Research Objectives/Questions	2
Model.....	4
Research Implications	4
II. Literature Review	6
Organizational Commitment	6
Work Experience Related Variables	9
Introduction to Social Networks.....	14
Social Networks.....	15
III. Methodology	22
Procedures	22
Sample	22
Measures.....	23
Analysis	25
IV. Analysis and Results.....	27
Factor Analysis.....	27
Intercorrelations.....	27

Regression Results.....	29
V. Discussion	34
Overview	34
General Discussion	34
Limitations.....	37
Future Research	38
Theoretical and Managerial Implications	38
Conclusion	39
Appendix A. Survey Questions.....	41
Appendix B. Tables	43
Appendix C. Figures	46
References	48

List of Figures

	Page
Figure 1. Proposed model of relationship between work experiences,.....	4
Figure 2. Social Network Structure	17
Figure 3. Diagram of a Social Network	18
Figure 4. Expanded moderation model	21

List of Tables

	Page
Table 1. Descriptive statistics and correlations.....	28
Table 2. Model Summary Statistics	29
Table 3. Model Coefficients	30
Table 4. Summary of Moderation of Centrality on PE-AC relationship	31
Table 5. Summary of Moderation of Centrality on LMX-AC relationship.....	32
Table 6. Summary of Moderation of Centrality on POS-AC relationship.	33

THE MODERATING EFFECT OF NETWORK CENTRALITY ON THE RELATIONSHIP BETWEEN WORK EXPERIENCE VARIABLES AND ORGANIZATIONAL COMMITMENT

I. Introduction

Problem Statement

The interest and study of social networks among both management scholars and practicing managers has risen drastically in recent years as most of the important work within organizations is increasingly accomplished collaboratively through social networks (Balkundi & Harrison, 2006; Burt, 1995; Burt, 2005; Lin, 1999; Sparrowe, Liden, Wayne, & Kraimer, 2001). However, few organizations know how to understand, harness, and influence their potential because they do not know how to control them (Cross & Prusak, 2002). Social networks are the relationships between actors, whether they are individuals, work units, or organizations. These relationships provide insight into who key members of the organization truly are and how these relationships influence organizational outcomes.

While the study of social networks is becoming more widespread, there are still unresolved empirical questions and theoretical debates as to the true consequences of social networks (Balkundi & Harrison, 2006). Learning the effects of informal social networks within an organization could provide supervisors with necessary tools to better understand and manage their workforce. Informal social networks provide an insight into true company culture. They have important implications to organizations as they have the potential to facilitate and constrain the flow of resources between and within organizational departments or teams (Balkundi & Harrison, 2006). While formal

structures in an organization take time to develop, informal networks are constantly changing due to present circumstances and interactions within the organization (Winston, 2006). Informal social networks encompass all of the channels of interaction and all of the relationships that exist outside of the formal relationships that are built into the organization's management structure (Groat, 1997). They are better able to deal with unpredictable scenarios and are better able to handle change (Winston, 2006). Managers that are able to harness the power of these informal social networks will be better able to manage their employees and foster collaboration in order to accomplish the goals of the organization. However, there has been no consensus among researchers surrounding what is known about social network effects (Balkundi & Harrison, 2006). Therefore, the purpose of this study was to examine the effects informal social networks have on organizational relationships using empirical data.

Research Objectives/Questions

Among a multitude of other ties (see Borgatti & Foster's 2003 article), an individual's position within an organization's social network has been linked to the two major individual outcomes of organizational behavior: organizational commitment and performance (Colquitt, LePine, & Wesson, 2012). While both outcomes are important to managers of organizations and scholars, this research focuses on the importance of an individual's commitment to the organization. Past work (Washington, 2012) has examined the effect of network position on individual job performance, but not the relationship between network position and commitment. However, organizations are becoming more concerned with commitment as they place an ever-growing emphasis on

retaining human capital, that is, knowledge, skills, and abilities (KSAs) within an organization (Crook, Todd, Combs, Woehr, & Ketchen Jr, 2011; Jones, 2004). Knowing what things they can influence to increase employees' organizational commitment and retain human capital within the organization would be beneficial to managers in all fields. Therefore, the first research question examines three work experience variables a manager can directly control in the organization and their effect on organizational commitment.

Research Question 1: What impact does psychological empowerment (PE), leader-member exchange (LMX), and perceived organizational support (POS) have on organizational commitment?

The ambiguous role that network position plays in individual outcomes should also be further examined. In his work, Washington (2012) found those individuals more central network position were shown to have an increased level of individual job performance. Previous research regarding the potential impact an individual's network position has on organizational commitment is scarce. Previous studies have shown evidence of links between an individual's position within a network and organizational commitment, but the role that network position plays has not necessarily been determined (Roberts & O'Reilly III, 1979). The need for further examination into this relationship provides this study with a second research question.

Research Question 2: How does social network position affect the relationships between the work experience variables of PE, LMX, and POS and organizational commitment?

This study examined affective commitment as a consequence of work experiences and determined if network centrality has an impact on this relationship. One purpose of this study was to replicate and extend previous research on the relationship between work experiences and affective commitment by using empirical data. Another purpose of this study was to determine if an individual's central position within a network moderates the relationship between work experiences and affective commitment in actual workplace settings. (Figure 1).

Model

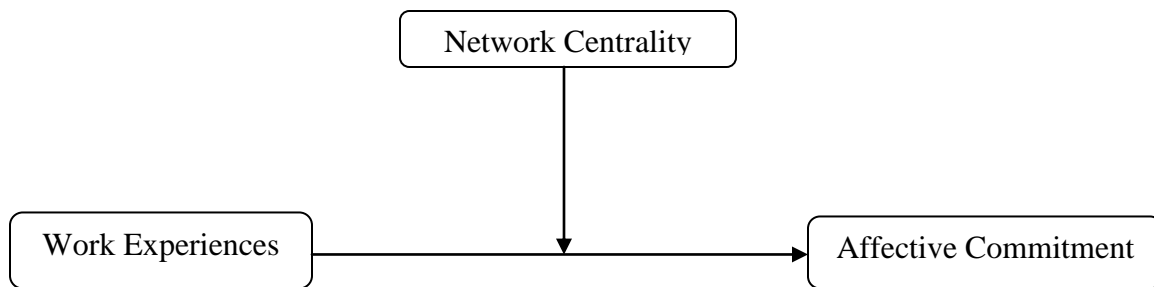


Figure 1. Proposed model of relationship between work experiences, affective commitment, and centrality

Research Implications

This research could provide valuable insight to both government and private sector organizations. Although not backed by academic sources, many believe some top young military members are leaving the service once their initial service commitment is completed due to numerous factors including extensive oversight, lack of autonomy, lack of emotional attachment to the organization, and poor work experiences in general.

Understanding commitment relationships could help the government retain those intelligent individuals, as well as those workers and military members in undermanned career fields. This would help not only in stabilizing the manning within these career fields and retain sharp young military members, but also control the overall impact to the government caused by their leaving. Decreasing indirect costs associated with the loss of personnel, such as loss of knowledge, job experience, and invested education and training is important for a government faced with future budget cuts, leaner initiatives, and constant changes to its organizational structure.

The private sector is also facing difficult challenges in maintaining human capital in their organizations. Decreasing employee turnover and absenteeism, as well as increasing job satisfaction and acceptance to change are directly impacting today's corporate, namely human resource, strategies (Iverson & Buttigieg, 2002). A better understanding of commitment relationships and the role informal social networks play in executing organizational outcomes could prove beneficial to the formation and implementation of future human resource policies.

II. Literature Review

Previous research has concentrated on the antecedents of affective commitment. This research examines the relationships between work experience variables (i.e., perceived organizational support, psychological empowerment, and social exchange) and affective commitment as well as possible moderators (i.e., social network location). The review begins by defining affective commitment and its importance to organizations. Next, each work experience variable is defined and its relationship with affective commitment based on past research is discussed. Finally, the review defines social networks, how they are constructed, and how they affect organizations, after which moderation models are introduced.

Organizational Commitment

Organizational commitment has received a great deal of attention in recent years due to its positive outcomes in organizations. Commitment is defined in many different ways, but is viewed as a “psychological state that (a) characterizes an employee’s relationship with the organization, and (b) has implications for the decision to continue or discontinue membership in the organization” (J. P. Meyer & Allen, 1991). The varying definitions of commitment all have 3 common characteristics: *obligation* to remain with the organization, perceived *costs* associated with leaving the organization, and affective *attachment* to the organization. Noting these commonalities, Meyer and Allen (1991) developed a construct to measure commitment comprising of three components: continuance commitment, normative commitment, and affective commitment.

Continuance commitment suggests the member's awareness of the costs associated with leaving the organization. Employees with a strong level of continuance commitment to the organization remain there because they *need* to do so. Continuance commitment is often times termed calculative commitment as it is a calculative decision to remain with an organization based on an assessment of perceived costs and benefits (Mathieu & Zajac, 1990). An example of continuance commitment would be if Employee A had family obligations that required him/her to earn a certain amount of pay and health benefits through his/her job. If Employee A remained with Organization X due to Organization X's ability to provide the required pay and health benefits that other organizations could not, Employee A would have a high continuance commitment.

Normative commitment reflects a feeling of obligation to continue employment (Meyer & Allen, 1991). Employees with high normative commitment stay there because they *ought* to. This obligation to an organization comes from the idea that employees must reciprocate to the organization because of something previously provided to them by the organization. If Organization Y paid for Employee B to get a master's degree with no employment responsibility attached and Employee B remained with Organization Y because s/he felt an obligation to the organization for having paid for the degree, Employee B would have high normative commitment.

Finally, affective commitment refers to the employee's emotional attachment to, identification with, and involvement in the organization (Meyer & Allen, 1991). Employees with a strong affective commitment continue employment because they *want* to do so. An example of affective commitment might be if Employee C had multiple

employment offers from rival organizations that included pay increases and opportunities for career advancement, but chose to stay with Organization Z due to Organization Z's ability to make Employee C feel like an essential part of their company and due to Employee C's strong feelings for involvement within the organization. If Employee C chose to stay with Organization Z for these reasons, Employee C would have high affective commitment.

Of the three components of commitment, affective commitment is shown to be the most influential in retaining human capital, creating better work attitudes regarding the organization, providing an environment that has a greater acceptance to change, and increasing overall job satisfaction and effectiveness (Iverson & Buttigieg, 2002; Meyer, Stanley, Herscovitch, & Topolnytsky, 2002; Park & Rainey, 2007; Randall & O'driscoll, 1997). This is due namely to the emotional factor related to affective commitment. When an individual has an emotional attachment to an organization, they are not simply committed to the organization for self promotion; rather, the company's values and goals are aligned with their own and the individual is committed to improving the organization as a whole. There has been extensive research done in regard to antecedents of affective commitment. It is suggested (Mowday, Porter, & Steers, 1982) that antecedents to affective commitment fall into four categories: personal characteristics, job characteristics, work experiences, and structural characteristics. Empirical studies show that work experience variables are most strongly correlated with affective commitment, (Meyer & Allen, 1991; Meyer et al., 2002; Meyer & Allen, 1987). It is important to note that trying to hire employees predisposed to being affectively committed or attempting to

buy their affective commitment through rewards will not be as effective as carefully managing their experiences following entry (Irving & Meyer, 1994; Meyer, Bobocel, & Allen, 1991). That is, organizations should not seek to hire people who have had high levels of affective commitment within their previous organizations or attempt to offer them additional compensation in order to gain an employee with high levels of affective commitment. These methods will prove ineffective in generating affective commitment within employees; rather, strong leadership, coupled with an organization's active demonstration through their own commitment by providing a supportive work environment is needed to increase affective commitment (Eisenberger, Huntington, Hutchison, & Sowa, 1986). Therefore, it is necessary to determine antecedents that managers can influence and provide them with tools that will enable them to achieve greater affective commitment and, in turn, become a more effective enterprise.

Work Experience Related Variables

Psychological Empowerment

Psychological empowerment (PE) is defined as increased intrinsic task motivation manifested in a set of four cognitions reflecting an individual's orientation to his or her work role: meaningfulness, competence, self-determination, and impact (Spreitzer, 1995).

Meaningfulness is "the value of the task goal or purpose, judged in relation to the individual's own ideas or standards...the individual's intrinsic caring about a given task" (Thomas & Velthouse, 1990). Individuals who find low levels of meaningfulness in their tasks or jobs are believed to feel apathetic and detached from significant events (May, 2007). Those with higher levels of meaningfulness, however, are believed to be

more committed, involved, and have a greater concentration of energy (Kanter, 1968; Sjoberg, Olsson, & Salay, 1983). An example of meaningfulness might be if Employee D worked in a high risk area and was in charge of 10 others working in the same conditions. There had been numerous injuries disabling some of his/her workers in the past year, leaving Employee D and the remaining workers to do the same amount of work with fewer resources. Employee D was tasked to work on a process to improve the safety within the high-risk areas of the organization. The value of this task would be very meaningful to Employee D, as the end goal of a better safety process would help ensure that s/he had all available resources to accomplish tasks.

Competence refers to “the degree to which a person can perform task activities skillfully when he or she tries” (Thomas & Velthouse, 1990). It signifies that the individual feels they have the necessary knowledge, skills, or abilities, to complete a job or task. An example of competence would be if Employee E was in charge of shipping orders to the customer. If Employee E has the knowledge and ability to locate the purchase order, pull the product from inventory, package the item, include all necessary shipping documents and forms, ship the item, document their work, notify finance that the order has shipped, and has the knowledge and confidence to manage any abnormalities in the process, s/he would have a high degree of competence.

Self-determination is an individual’s sense of having the ability to choose to initiate and control actions (Deci, Connell, & Ryan, 1989). Self-determination “reflects autonomy in the initiation and continuation of work behaviors and processes” (Thomas & Velthouse, 1990). A representation of self-determination can be seen in the following

example: Employee F is in charge of the workers and process of creating Product 1. Employee F had set the production volume of Product 1 at 25 per week. However, this proved to be a heavy workload for the workers and 20% of all Product 1's were coming back for rework. Employee F has autonomy over his/her process and makes the decision to cut the production volume to 20 per week in order to achieve the level of quality the company desires. This decision, made by Employee F, shows a high level of self-determination.

Finally, *impact* is defined as the degree or perceived influence that an individual has over important strategic, administrative, or operating outcomes (Ashforth, 1989; Liao, Toya, Lepak, & Hong, 2009). A real world example of impact would be if Employee G works for an investment firm and is very good at analyzing statistics. Each month Employee G's supervisor asks him/her to analyze ten companies and identify three companies out of the ten that the firm should invest in and why. Employee G's supervisor then takes this analysis to the corporate meeting each month where company executives discuss future investing strategy and explains why the firm should invest in the 3 companies Employee G chose. Employee G's impact is high in this case as s/he feels that his/her analysis is influencing strategic firm outcomes.

Due to the nature of PE, members of an organization who are more empowered have greater commitment to the organization. Members who feel that they are empowered within their organization are more likely to be participative and make decisions based on their perception of their individual ability to influence outcomes. Individuals not only feel that they can influence and shape their own work role and

context, but they feel that their doing so holds meaning within the organization. These feelings of empowerment have been found to facilitate worker's commitment to the organization in a number of different fields across the globe in both government and commercial organizations (Spreitzer, 1996; Bogler & Somech, 2004; Janssen, 2004; Kirkman & Rosen, 1999). Based on this discussion the following hypothesis is proposed.

Hypothesis 1 – Psychological empowerment (PE) will have a positive relationship with affective commitment (AC).

Social exchange

Exchange processes play an important role in the workings and interactions within an organization. Most of the research done in regards to exchange processes is based on the framework of social exchange theory. Blau (1964) was one of the first researchers to study social exchanges and referred to them as unspecified obligations; when one person does another a favor, there is an expectation of some future return, though exactly when it will occur and in what form is often unclear (Gouldner, 1960). It is important to note that these exchanges are based on the long-term perceived balance of exchanges (Blau, 1964). Two major types of social exchanges have emerged from previous research, receiving much attention in recent years. Exchanges between the employee and his or her leader (supervisor) are referred to as leader-member exchange (LMX). Perceived organizational support (POS) references exchanges between employees and the employing organization. Research has shown evidence regarding the

distinctiveness of each of these constructs and also suggested that each type of exchange is important and often influences different organizational outcomes (Wayne, Shore, & Liden, 1997).

Leader-member exchange

Social exchange theory provides a theoretical basis for LMX (Sparrowe & Liden, 1997). Leader-member exchange suggests that interpersonal relationships between employees and their supervisors evolve against the background of the formal organization (G. Graen & Cashman, 1975). The relationship is based on social exchange, wherein “each party must offer something the other party sees as valuable and each party must see the exchange as reasonably equitable or fair” (Graen & Scandura, 1987). In LMX relationships, the perceived value of tangible or intangible resources exchanged between the two parties dictates the quality of the relationship: the greater the perceived value of the exchanged capital, the higher the quality of the LMX relationship (Wayne et al., 1997). This relationship helps build commitment through the norm of reciprocation. The norm of reciprocation – the rule that obliges us to repay others for what we have received from them – is one of the strongest and most pervasive social forces in all human cultures (Gouldner, 1960). It helps us build trust with others and pushes us toward equity in our relationships (Kelln & Ellard, 1999). Therefore, supervisors that foster relationships of social exchange with their employees will be strengthening employees’ commitment to the relationship, and in turn, the organization (Scholl, 1981). Previous research has shown that this construct of exchange positively affects affective commitment (Duchon, Green, & Taber, 1986), and provides the basis for Hypothesis 2.

Hypothesis 2 – Leader-member exchange (LMX) is positively related to affective commitment (AC).

Perceived Organizational Support

POS is an exchange concept developed by Eisenberger and his colleagues (1986) to explain the development of employee commitment to an organization. Their research proposed that “employees develop global beliefs concerning the extent to which the organization values their contributions and cares about their well-being.” Perceptions of being valued and cared about by an organization enhance employees’ trust that the organization will fulfill its exchange obligations (Wayne et al., 1997). This works on the basis of the reciprocity norm, where POS creates a felt obligation to care about the organization’s welfare and help the organization reach its objectives. In turn, employees fulfill this indebtedness through greater AC and increased efforts to aid the organization (Rhoades, Eisenberger, & Armeli, 2001; Eisenberger et al., 1986; Mowday et al., 1982; Wayne et al., 1997). Based on the previous discussion, the following hypothesis is proposed.

Hypothesis 3 – Perceived organizational support (POS) is positively related to affective commitment (AC).

Introduction to Social Networks

There are two major classifications of networks that exist in social network literature: formal and informal (Scott, 2000). Formal networks can be thought of as those networks that define rules, regulations, policies, and objectives that state who does what

and where it is done within the context of one's job. Formal networks follow a chain of command, or hierarchical structure that can be visually depicted in an organization chart. These formal networks make clear distinctions of what department a person is in, who their boss is, and what their job title is.

Informal networks differ in the fact that they are not officially recognized by the organization as part of doing one's job. They are based on relationships that each individual engages in. These relationships can occur between co-workers due to shared interests, or extracurricular activities that occur completely outside the workplace. Whereas formal networks are completely work-related, exchanges in an informal network can be personal or social (Ibarra & Andrews, 1993). While formal networks show the official rules and workings of an organization, informal networks show how the organization actually works. Therefore, researchers suggest managers focus on informal social networks, rather than formal networks, because they have the greatest influence in the organization (Casciaro & Lobo, 2005; Kleiner, 2002).

Social Networks

Informal networks (hereafter, social networks) continue to be analyzed by researchers to determine their function and influence. Interest in social networks can be attributed to the popularization of social capital, which has emerged as a business competence, receiving wide attention in business journals and popular literature (Burt, 1995; Cohen & Prusak, 2001). Social capital refers to the ability of individuals to facilitate information flow, exert influence, and attain individual social credentials by being connected to others in social networks or other social structures (Lin, 1999). This

advantage of social capital is created by a person's location in the structure of network relationships. Research done by Burt (1990) suggests that positions of social capital can be found by identifying locations of individual nodes within a social network. Once these nodes have been identified, it is possible to assess how close or far the node is from a strategic location, there the occupant has the competitive advantage in possible access to more, diverse, and valued information. Other research examines the amount of direct or indirect ties with individuals who are represented by wealth, status, and power, as these are often considered valuable resources in many societies (Lin, 1982). Those with more direct and indirect ties to individuals with these characteristics will have greater access to social resources, therefore being more powerful and influential. However, no matter the research approach used, network location is a key element of identifying and creating social capital (Lin, 1999).

Social network analysis (SNA) has emerged throughout many different fields as a tool for examining social capital (Hatala, 2006). The goal of SNA is to identify "who the key actors are and what positions they are likely to take" to determine relational behaviors (Krackhardt, 1996). SNA is a conceptualization of social structure as a network of relationships (ties) connecting members (nodes)(Figure 2) and channeling resources and focuses on the characteristics of these relationships rather than the characteristics of the individual members (Wetherell, Plakans, & Wellman, 1994). SNA has been used to examine relationships across many different domains including Sociology, Organizational Development, Biology, Anthropology, political sciences, and communications (Renfro, 2003).

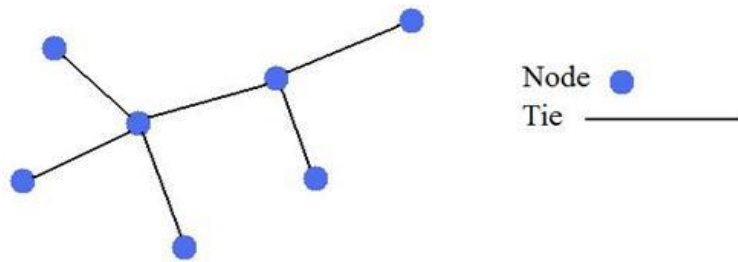


Figure 2. Social Network Structure

Network Centrality

Researchers have agreed that “centrality is one of the most important and widely used conceptual tools for analyzing social networks. Nearly all empirical studies try to identify the most important actors within a network” (Everett & Borgatti, 2005). Over the years, studies have shown that individuals who are more central in a network provide an increase in social capital. Not only do they have greater access to information and resources (Brass & Krackhardt, 1999; Ibarra & Andrews, 1993), but they also have more power and influence within an organization (Brass & Burkhardt, 1992). Noting these results, it is no surprise that centrality is the tool most often used in social network analysis to provide measures of social capital (Everett & Borgatti, 2005).

Betweenness centrality is a measure of centrality determined by the number of times that one individual is on the shortest path between another pair of individuals within a network (Borgatti, 1995). As such, it measures flow between two nodes on the geodesic (shortest dyad between two nodes) (Hanneman & Riddle, 2005). An example can be seen in Figure 3 where Bob has high betweenness centrality because all flows must pass through Bob to go from one node to the other. One can see betweenness

centrality “measures the network flow that a given node ‘controls’ in the sense of being able to shut it down as necessary” (Borgatti, 2005). Flow betweenness centrality, however, expands the notion of betweenness centrality by assuming that actors will use all pathways that connect, proportionally to the length of the pathways (Hanneman & Riddle, 2005). For example, assume that two actors (Arthur and Alex) want to have a relationship, but the geodesic path between them is blocked by a reluctant broker (Bob). Since there exists another pathway (Arthur-Beth-Brian-Alex), the two actors are likely to use it, even if it is “less efficient.” Flow betweenness centrality takes these “less-efficient” paths into consideration rather than simply focusing on the geodesic paths. This provides a more complete measure of betweenness centrality and better models how individuals interact in real-world organizations (Hanneman & Riddle, 2005).

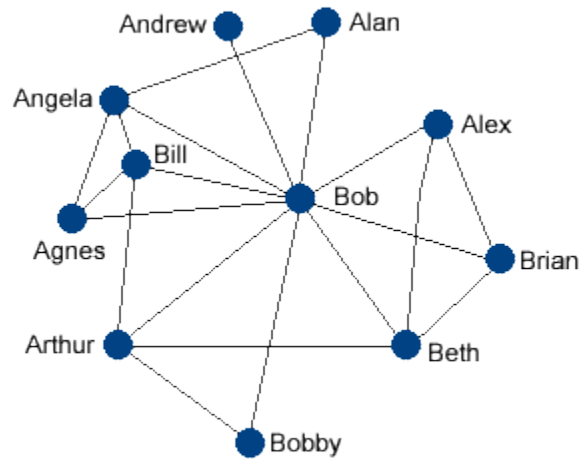


Figure 3. Diagram of a Social Network

Due to the power and influence of social networks within an organization, studies are beginning to examine the relationship between social networks and affective commitment. Prior empirical research has provided theoretical insight to develop the structural and relational dimensions of social networks and affective commitment (Lee & Kim, 2011). However, due to the stronger relationships between work experience variables and affective commitment, research on the role that social networks play on these relationships should be examined. Employees that take up a central position within a social network manage greater ties with coworkers. This position “provides the employee with better opportunities to access coworkers who are willing to exchange social support” (Lee & Kim, 2011). Therefore, it is likely that they feel a greater sense of significance, attachment to others, and a sense of belonging to the organization (Morrison, 2002; Wellman, 1992). Additionally, individuals more centrally positioned have more alternative paths to reach coworkers, allowing the employees to be less emotionally dependent and more socially autonomous (Ibarra & Andrews, 1993). Enhanced social autonomy leads them to “enhance greater self control and to manage healthier relationships with coworkers, which influence their affective commitment positively” (Lee & Kim, 2011). Furthermore, there exists evidence that employees having a higher degree of centrality foster increased LMX. Individuals that have more ties with those network contacts that the leader enjoys high levels of trust and respect with will be more likely to benefit from reciprocal social exchange from said leader (Sparrowe & Liden, 1997). Having greater centrality also gives the employee more sources of information and advice in which individual job performance is increased (Cross &

Prusak, 2002). This can create an increased level of trust and respect between the employee and supervisor, leading to further increases in affective commitment.

Based on this discussion and the increased number of opportunities to access coworkers who are willing to exchange support incurred by those members more central to a network, Hypothesis 4 is proposed.

Hypothesis 4 – An individual's position within a social network will moderate the relationship between perceived organizational support (POS) and affective commitment such that greater centrality will strengthen the relationship, and lower centrality will weaken it.

The concept that more sources of information and advice create an increased perception of a member's ability by the leader and therefore increasing trust and respect between the two provides the basis for Hypothesis 5.

Hypothesis 5 - An individual's position within a social network will moderate the relationship between leader-member exchange (LMX) and affective commitment such that greater centrality will strengthen the relationship, and lower centrality will weaken it.

Finally, the ability for one to be more socially autonomous, coupled with a greater sense of significance and belonging as they are more central to a social network creates the foundation for Hypothesis 6.

Hypothesis 6 - An individual's position within a social network will moderate the relationship between psychological empowerment (PE) and affective commitment such that greater centrality will strengthen the relationship, and lower centrality will weaken it.

Figure 4, which shows the model used to test hypotheses 1-6, proposes that the relationship between work experience variables and affective commitment depends on the degree of an individual's central position within a network.

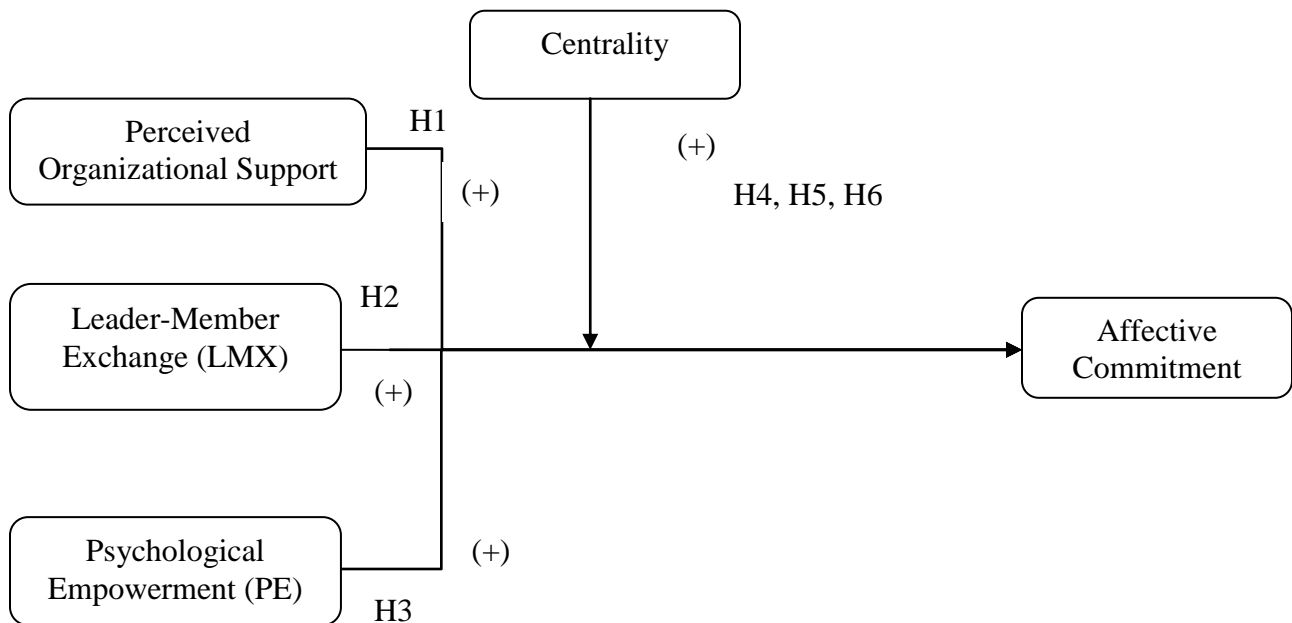


Figure 4. Expanded moderation model of the relationship between work experience variables, affective commitment, and centrality

III. Methodology

Procedures

Data were collected using two different surveys administered to three separate government organizations in the Midwest. The surveys were administered between January and December 2008. Each of the research variables and a summary of their use in the survey(s) can be found in Appendix A. Questionnaires were mailed to pre-identified points of contact in each of the three organizations. These points of contact distributed the questionnaires to each organizational member. Attached to each questionnaire was a letter stating the purpose of the survey and providing the contact information for the researcher. Completed questionnaires were mailed back using a self-addressed stamped envelope. Participation was strictly voluntary and respondents' anonymity was maintained.

Sample

Approximately 201 members from the three government organizations were invited to participate in the first survey. Of the 201 members invited, there were 141 respondents, of which 109 of the surveys were deemed usable, resulting in a 54% response rate. For the second survey, only the 141 respondents from the first survey were invited to participate. Of those 141 invited to participate, 80 returned complete and useable surveys for a response rate of 57%. Demographics of the personnel who responded to the surveys were not available.

Measures

Five different measures were used throughout this study including: (a) affective commitment, (b) network centrality, (c) perceived organizational support, (d) leader-member exchange, and (e) psychological empowerment. Each of the items used in the collection of each measure are listed in Appendix A. A 5-point Likert-scale ranging from “Strongly Disagree (1)” to “Strongly Agree (5)” was used for the collection of each measure unless otherwise specified. An aggregate score was obtained for each measure by summing and averaging their respective items, with high scores indicating high levels of measure.

Affective Commitment

Participant’s affective commitment (AC) was completed by each individual participant and evaluated using a 6-item measure. The 6-item measure was extracted from Meyer & Allen’s (1997) complete model of organizational commitment to include only those items associated with an individual’s emotional attachment to the organization, or AC. The Cronbach alpha value for this study was .862. ($n = 76$, Mean = 3.2, and SD = .83).

Network Centrality

To evaluate centrality, a survey measuring advice relationships was administered through the roster method. Each of the respondents received a list of names of people within his or her group. They were then asked to reply to a question in order to determine the strength of their relationship with the individual. The question used to assess the advice network inquired, “How frequently do you go to this person for advice

concerning organizational matters?” As the interest in the study was to determine the strength of the relationships among individuals who knew each other, participants were instructed to provide a response ranging from “Never (1),” “About once every few months (2),” “About once a month (3),” “Several times a week (4),” “Several times a day (5).” An advice network adjacency matrix was calculated from the relationship data provided by each of the participants. Betweenness centrality scores based on network flow were calculated for each individual within a network in order to allow for comparisons across all three organizations (Borgatti, Everett, & Linton, 2002; Borgatti, 2005; Borgatti, Everett, & Linton, 2008; Freeman, Borgatti, & White, 1991).

Social Exchange

Two different elements of social exchange, perceived organizational support, and leader-member exchange, were measured for this study. Measures of perceived organizational support (POS) examined employee trust and commitment on a basis of the relationship between the employee and the organization being reciprocal. Leader-member exchange (LMX) evaluated the exchange relationship between the employee and their supervisor in order to determine the extent to which each party trusted that resources would be fairly passed between the two.

A participant’s POS was evaluated by the individual completing a 6-item measure. Each of the items measuring POS came from Eisenberger’s (2001) study regarding the reciprocation of perceived organizational support. The items were scaled from “Strongly Disagree (1)” to “Strongly Agree (5).” Cronbach alpha value for this study was .892. ($n = 109$, Mean = 3.32, and SD = .68).

LMX was also completed by the individual participants using an 8-item measure. The 8-item LMX measure was an adaptation of the original 7-item measure created by Scandura & Graen (1984). The 8-item adaptation was used based on changes suggested by Liden, Wayne, and Stillwell (1993) and Bauer and Green (1996) asserting that performance delegation interactions are an integral part of LMX development and should be included in LMX measures. Cronbach alpha value for this study was .95. (n = 107, Mean = 3.85, and SD = .81).

Psychological Empowerment

Participants rated their degree of psychological empowerment using Spreitzer's (1997) 12-item measure that represents of the four measures of PE: meaning, competence, autonomy, and impact. Each of the four dimensions was quantified by three measures on a 5-point Likert-scale. Cronbach alpha value for PE in this study was .835 (n = 101, Mean = 3.91, and SD = .53).

Analysis

Hierarchical regression analysis was used to test for significance between dependent and independent variables. The regression was performed using SPSS statistical analysis software. In hierarchical regression, the independent variables are added to the regression equation based on past work and the theoretical assumptions by the experimenter. In an effort to minimize this study's common method variance (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003), the researcher used predictor variables measured from time one and the criterion variable measure was taken from time two.

Ordinary least sum of squares regression was used to test for moderation. This test was carried out using SPSS statistical analysis software.

IV. Analysis and Results

Factor Analysis

A principal components analysis using a varimax rotation with Kaiser Normalization was used to examine the factor structure of perceived organizational support (POS), leader-member exchange (LMX), and psychological empowerment (PE). This analysis determined that the items loaded on hypothesized factors suggested by Eisenberger (2001) for POS, Scandura & Graen (1984) for LMX, and Spreitzer (1995) for PE.

The Kaiser-Meyer-Olkin measure verified the sampling adequacy for the analysis, $KMO = .815$, which is above the acceptable limit of .5 (Kaiser, 1974). An initial analysis was run to determine eigenvalues for each component of the data. Six components had eigenvalues greater than Kaiser's criterion of 1 and together explained 77.15% of the variance. Table B1 in Appendix B shows the factor loadings after rotation. Each of the items for POS and LMX all loaded into a factor respective to their associated variable. Items for PE were factored into 3 components based on Spreitzer's measures for PE (1995). No cross-loadings were found and each of the items was cleanly matched to only one of the 5 components.

Intercorrelations

Table 1 includes descriptive statistics for each of the variables in this study including mean, standard deviation, minimum, and maximum. Sample sizes of some variables differ from the models due to the pairwise deletion of cases caused by missing scores on other variables. Also included in Table 1 are bivariate correlations which

indicated that each of the independent variables, PE ($r = .516$), LMX ($r = .377$), and POS ($r = .622$), was significantly related to affective commitment. The correlations between PE and AC as well as LMX to AC were consistent with past studies (Bogler & Somech, 2004; Park & Rainey, 2007; Wayne et al., 1997). The correlation between affective commitment and POS ($r = .622$) was slightly higher than that of many studies including Wayne, Shore, and Liden ($r = .50$, 1997). Also worth noting was that centrality did not correlate with any of the independent variables and showed little correlation with the dependent variable. This is desirable to provide a clearly interpretable interaction term when determining moderation (Baron & Kenny, 1986).

Table 1. Descriptive statistics and correlations

Variable	<i>n</i>	Mean	<i>s.d.</i>	Min	<i>Max</i>	1	2	3	4
1 POS	109	3.32	0.68	1.00	5.00				
2 LMX	109	3.85	0.81	1.50	5.00	.396**			
3 PE	108	3.91	0.53	2.58	4.92	.554**	.302**		
4 flowbetweenness	109	33.2	64.46	0.00	400.80	-0.021	-0.016	-0.085	
5 Aff. Comm	80	3.20	0.83	1.00	5.00	.622**	.377**	.516**	-0.188

**correlation is significant at the .01 level (1-tailed)

Regression Results

Hypotheses 1 - 3

Hierarchical stepwise regression was used to test for significance of the first three hypotheses. A complete breakout of the results is listed in Tables 2 and 3. The significance of $p < .001$ for psychological empowerment shows that PE is a considerable factor to affective commitment and accounted for 23.7% of the explained variance alone, as noted by the ΔR^2 . When leader-member exchange was included in the model, an additional 4.1% of explaining power was added. This change, although slightly low, was significant ($p < .05$), and therefore LMX was also deemed an important contributor to affective commitment. Finally, adding perceived organizational support to the model provided 14.7% more predictive ability to our model. The significance for POS of $p < .001$ indicated that POS was an important contributor to our model.

The analysis showed support for the first three hypotheses. Each of the three variables was deemed significant as their p-values were all $< .05$ when they were added to the stepwise regression. Psychological empowerment had significance in the model and a standardized Beta of .195 showing that H1 was supported in the model. Hypothesis 2 was supported as Leader-member exchange was statistically significant and yielded a standardized Beta of .075. Finally, data analysis on POS provided full support for H3 yielding a statistically significant result and producing a standardized Beta of .484. These statistics are detailed in Table 3.

Table 2. Model Summary Statistics

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.487 ^a	.237	.228	.73531	.237	23.980	1	77	.000
2	.528 ^b	.278	.259	.72004	.041	4.299	1	76	.042
3	.652 ^c	.425	.402	.64704	.147	19.117	1	75	.000

a. Predictors: (Constant), PE

b. Predictors: (Constant), PE, LMX

c. Predictors: (Constant), PE, LMX, POS

Table 3. Model Coefficients

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.209	.617		.339	.735
	PE	.763	.156	.487	4.897	.000
2	(Constant)	-.151	.628		-.241	.811
	PE	.642	.163	.410	3.935	.000
	LMX	.215	.104	.216	2.073	.042
3	(Constant)	-.210	.565		-.372	.711
	PE	.305	.166	.195	1.843	.069
	LMX	.075	.099	.075	.761	.449
	POS	.582	.133	.484	4.372	.000

a. Dependent Variable: affcommit

Hypotheses 4 – 6

Hypothesis 4 predicted that an individual's central position within a network would moderate the relationship between PE and AC such that increases in centrality would increase the PE-AC relationship. The hypothesis was tested using the ordinary least sum of squares method specified previously. Data analysis of the moderation is summarized in Table 4. The results show a significant relationship ($p = .02$); therefore, H4 was supported.

Table 4. Summary of Moderation of Centrality on PE-AC relationship
Tests of Between-Subjects Effects

Dependent Variable: affcommit

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	17.991 ^a	3	5.997	11.478	.000
Intercept	.438	1	.438	.839	.364
flowbetweenness	3.425	1	3.425	6.556	.013
PE	5.378	1	5.378	10.293	.002
flowbetweenness * PE	2.995	1	2.995	5.732	.020
Error	27.169	52	.522		
Total	623.088	56			
Corrected Total	45.159	55			

a. R Squared = .398 (Adjusted R Squared = .364)

Hypothesis 5 predicted that centrality would moderate the relationship between LMX and AC, such that increases in centrality would produce an increase in the LMX-AC relationship. The hypothesis was tested using the ordinary least sum of squares method specified previously. The model showed a lack of significance once the interaction term was added ($p = .096$); therefore, H5 was not supported. Data analysis of the moderation is summarized in Table 5.

Table 5. Summary of Moderation of Centrality on LMX-AC relationship.

Tests of Between-Subjects Effects

Dependent Variable:affcommit

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	8.929 ^a	3	2.976	4.354	.008
Intercept	11.266	1	11.266	16.480	.000
flowbetweenness	2.393	1	2.393	3.500	.067
LMX	1.663	1	1.663	2.433	.125
flowbetweenness * LMX	1.968	1	1.968	2.878	.096
Error	36.232	53	.684		
Total	633.116	57			
Corrected Total	45.161	56			

a. R Squared = .198 (Adjusted R Squared = .152)

Finally, Hypothesis 6 predicted that centrality would moderate the relationship between POS and AC, such that an increase in centrality would increase the POS-AC relationship. The hypothesis was tested using the ordinary least sum of squares method specified previously. Data analysis shows a statistically significant relationship when the interaction is added to the model ($p = .049$); therefore H6 is supported. Details regarding these statistics are listed in Table 6.

Table 6. Summary of Moderation of Centrality on POS-AC relationship.

Tests of Between-Subjects Effects

Dependent Variable: affcommit

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	22.706 ^a	3	7.569	17.865	.000
Intercept	2.634	1	2.634	6.218	.016
flowbetweenness	2.120	1	2.120	5.005	.030
POS	10.649	1	10.649	25.135	.000
flowbetweenness * POS	1.721	1	1.721	4.062	.049
Error	22.455	53	.424		
Total	633.116	57			
Corrected Total	45.161	56			

a. R Squared = .503 (Adjusted R Squared = .475)

V. Discussion

Overview

The purpose of this research was to explore the effects of an individual's network position on work experience variables and affective commitment. Specifically, this study examined three work experience variables, psychological empowerment (PE), leader-member exchange (LMX), and perceived organizational support (POS), to determine their effects on affective commitment (AC) and developed a moderation model to determine the external effects of network position on these relationships. In testing the model, five out of six hypotheses were supported. The moderation found shows that the effect of these work experience variables is partially dependent on centrality. Results indicate that each of the independent variables have a statistically significant impact on AC, confirming hypotheses 1-3. Furthermore, centrality in an advice network moderates the relationship between psychological empowerment and affective commitment (Hypothesis 6) and perceived organizational support and affective commitment (Hypothesis 4). However, results show only partial support for moderation of centrality in an advice network between leader-member exchange and affective commitment (Hypothesis 5).

General Discussion

While past research suggests a greater correlation between perceived organizational support and affective commitment, this research focused on psychological empowerment and leader-member exchange. These two work experience variables are more easily influenced by one's superior creating the desired atmosphere within the

workplace. Rather than trying to create an atmosphere that depends on the support of the entire workplace (POS), superiors can more easily be effective in controlling their relationships with employees by increasing employee empowerment and leader-member exchange. Therefore, this study focused on these variables first, despite the higher correlations of POS in previous research, in order to provide managers with insight into changes they should make that were also within their sphere of control. For these reasons, the independent variables were entered into the hierarchical regression in the order of PE, LMX, and finally POS. While each of these variables played a significant role in our model, it was clear that POS was the most influential.

This research also showed that informal social networks play a role in the key individual outcome of affective commitment. Centrality fully moderates the PE-AC and POS-AC relationships. These results coincide with the research that being more central to an informal network drives an increase in social capital. This increase in social capital creates a feeling that one is part of an organization and able to make a difference, which affects their overall affective commitment to the organization. However, the LMX-AC relationship was not fully supported (based on a 95% confidence interval) by the moderation of centrality. It is possible that statistical power played a role in this moderation not being statistically significant. Statistical power is the long term probability that the statistical test will reject a false null hypothesis. In order to meet an acceptable power of .80 for this interaction, a sample size of 76 is required (Cohen, 2002). While there were 80 surveys returned for use at time two, incomplete data caused the deletion of pairwise cases, leaving only 57 degrees of freedom for the centrality

interaction on the LMX-AC relationship. Having an increased sample size would provide the test with the necessary power to determine if the lack of significance is due to Type II error, the failure to reject a false null hypothesis. The lack of significance also may have been caused by the category of people that were surveyed for the data set used. This data set consisted primarily of administrative personnel in government organizations. A wider variety of data across more organizations might possibly lead to a more significant outcome.

The relationship between each of the independent variables and affective commitment was plotted using ModGraph (Jose, 2003). The graphs can be found in Appendix C. The interactions between each of the independent variables and network centrality was plotted by using one standard deviation above the mean as the high mean, and one standard deviation below the mean as the low mean (following Aiken & West, 1991). Significant interactions of network centrality on the PE-AC and POS-AC relationships can be found in Figures C1 and C3, respectively. Each of the graphs shows that an increase in network centrality positively enhances the respective AC relationship.

While the moderation of network centrality on the LMX-AC relationship was deemed insignificant in this study (using a 95% confidence interval), it appeared to be heading in the right direction. As previously discussed, sample size may have played a role in the lack of significance in concerning this moderation relationship. Therefore, even though the results of Hypothesis 5 proved to be insignificant, a ModGraph showing the interaction effects of network centrality on the LMX-AC relationship is also shown in Appendix C. The ModGraph shows that there is a significant effect of network centrality

on the LMX-AC relationship using the data collected. This provides further evidence to review this moderation relationship using a data set with a bigger sample size.

Limitations

While this study replicated findings in previous research and found evidence to support social network research, possible limitations to the study exist. First of all, this study used an archival data set. Secondly, all the data was collected using self-report instruments. Self-report instruments are subject to consistency and social desirability concerns. When answering questions on the survey, respondents may have answered the questions consistently based on the expectations of their organization or society as a whole rather than answering truthfully.

Factors limiting the generalizability of the data set are the biggest limitation to this study. First of all, demographic data was not used for this study. This data would have provided a picture of the types of people that constituted the study sample. Additionally, demographic data would allow those reading this study to make more informed decisions regarding the applicability of this study to their own work settings. Secondly, the work environment that the data was collected from was quite narrow. As stated previously, this data was collected from only government organizations consisting primarily of administrative personnel. Generalizing the results of this research and applying it to other organizations should be done so carefully. An environment with clearly specified roles and well-defined work could limit the amount of help employees provide to one another, while another environment characterized by less routine work

could cause more employees to need help while allowing flexibility to help one another (Bowler & Brass, 2006).

Future Research

The results of this study suggest centrality contributes to explaining the relationship between an individual's work experiences and their affective commitment to the organization. This presents a number of avenues for future research. First of all, this study should be replicated with a wider data set to include both government and non-government organizations. This will help determine if the results of this study are generalizable or if they are limited to government organizations. Furthermore, the leader-member exchange aspect of this study should be examined more closely. Lastly, more research should be done to study the implications of organizational structure on these relationships. As businesses move to a more flat organizational structure, it is possible that centrality will affect these relationships differently.

Theoretical and Managerial Implications

The results of this study suggest that the relationship between work-experiences and affective commitment is enhanced by an employee's more central position to an informal social network. There are multiple significant points both managers and employees alike can draw from these results. First of all, work experiences, namely psychological empowerment, leader-member exchange, and perceived organizational support, are still important predictors of affective commitment. Employees who have better work experiences such as being given a greater degree of autonomy, being deemed competent and able to make key organizational decisions, and feeling that both

coworkers and supervisors support their actions, will be more beneficial to the company than other actions such as offering higher salaries or more benefits. Therefore, supervisors should seek to actively create a work environment that promotes PE, LMX, and POS in an effort to achieve increased commitment. Secondly, higher degrees of centrality improve employee commitment. First of all, employees with a higher degree of centrality will see greater access to resources and information. This will provide them with more opportunities than those members on the periphery. Managers having employees who they want to see an increased commitment in should try and help them achieve a higher degree of centrality. While this is easier said than done, there are ways that managers can encourage and facilitate the number of ties employees have. Depending on the capacity of the organization, managers might modify the operational structure and adjust the constraints in order to mitigate the controls caused by the structure of the organization. Furthermore, managers might set up informal and formal meetings with the purpose of stressing effective communication of tasks and clear goals in order to further develop relationships. Finally, managers can provide employees with various programs that generate support among employees by building social networks, as proposed by previous scholars (Moynihan & Pandey, 2008; Snyder & de Souza Briggs, 2004).

Conclusion

In conclusion, the purpose of this study was to examine the moderating effect of an individual's position within a network on affective commitment relationships. There was evidence that centrality was a significant moderator in the relationship between

affective commitment and both perceived organizational support and psychological empowerment. Managers can use these findings to better understand the role that social networks play in the commitment of their workforce. Aware of these relationships, managers can more effectively manipulate the workplace environment and mentor individuals in order to maximize affective commitment to their organization, a key individual outcome.

Appendix A. Survey Questions

The following questions pertain to your current job. Read each statement and using the scale below as a reference, circle the number ranging from 1 “Strongly Disagree” to 5 “Strongly Agree” which indicates how you feel.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

Psychological Empowerment

The work I do is very important to me.	1	2	3	4	5
My job activities are personally meaningful to me.	1	2	3	4	5
The work I do is meaningful to me.	1	2	3	4	5
I am confident about my ability to do my job.	1	2	3	4	5
I am self-assured about my capabilities to perform my work activities.	1	2	3	4	5
I have mastered the skills necessary for my job.	1	2	3	4	5
I have significant autonomy in determining how I do my job.	1	2	3	4	5
I can decide on my own how to go about doing my work.	1	2	3	4	5
I have considerable opportunity for independence and freedom in how I do my job	1	2	3	4	5
My impact on what happens in my department is large.	1	2	3	4	5
I have a great deal of control over what happens in my department.	1	2	3	4	5
I have significant influence over what happens in my department	1	2	3	4	5

Leader-Member Exchange

My supervisor understands my problems and needs.	1	2	3	4	5
My supervisor would be personally inclined to use his/her power to help me solve problems in my work.	1	2	3	4	5
I can count on my supervisor to ‘bail me out’, even at his/her own expense, when I really need it.	1	2	3	4	5
I would view my working relationship with my supervisor as extremely effective.	1	2	3	4	5
I have enough confidence in my supervisor that I would defend and justify his/her decisions if he/she were not present to do so.	1	2	3	4	5
I usually know where I stand with my supervisor.	1	2	3	4	5
I usually know how satisfied my supervisor is with me.	1	2	3	4	5
My supervisor recognizes my potential well.	1	2	3	4	5

Perceived Organizational Support

My organization takes pride in my accomplishments.	1	2	3	4	5
My organization really cares about my well-being.	1	2	3	4	5
My organization values my contributions to its well-being.	1	2	3	4	5
My organization strongly considers my goals and values.	1	2	3	4	5
My organization shows little concern for me.	1	2	3	4	5
My organization is willing to help me if I need a special favor.	1	2	3	4	5

Affective Commitment

I would be very happy to spend the rest of my career with this organization.	1	2	3	4	5
I really feel as if this organization's problems are my own.	1	2	3	4	5
I do not feel like "part of the family" at my organization.	1	2	3	4	5
I do not feel "emotionally attached" to this organization.	1	2	3	4	5
This organization has a great deal of personal meaning for me.	1	2	3	4	5
I do not feel a strong sense of belonging to my organization.	1	2	3	4	5

Appendix B. Tables

Table B1. Factor Loadings after Rotation

Rotated Component Matrix ^a					
	Component				
	1	2	3	4	5
POS01		.689			
POS02		.768			
POS03		.756			
POS04		.747			
POS05r		.784			
POS06		.782			
PE01				.859	
PE02				.859	
PE03				.923	
PE04					.863
PE05					.893
PE06					.791
PE07			.793		
PE08			.807		
PE09			.815		
PE10			.578		
PE11			.753		
PE12			.716		
LMX01	.851				
LMX02	.871				
LMX03	.790				
LMX04	.907				
LMX05	.896				
LMX06	.924				
LMX07	.906				
LMX08	.730				

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 6 iterations.

Table B2. Hierarchical Regression ANOVA Output from SPSS

ANOVA ^d						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	12.965	1	12.965	23.980	.000 ^a
	Residual	41.632	77	.541		
	Total	54.598	78			
2	Regression	15.195	2	7.597	14.653	.000 ^b
	Residual	39.403	76	.518		
	Total	54.598	78			
3	Regression	23.198	3	7.733	18.470	.000 ^c
	Residual	31.399	75	.419		
	Total	54.598	78			

a. Predictors: (Constant), PE

b. Predictors: (Constant), PE, LMX

c. Predictors: (Constant), PE, LMX, POS

d. Dependent Variable: affcommit

Table B3. Correlation output from SPSS

		Correlations				
		PE	POS	LMX	affcommit	flow betweenness ADVICE
PE	Pearson	1	.554**	.302**	.516**	-.085
	Correlation					
	Sig. (1-tailed)		.000	.001	.000	.230
	N	107	107	107	78	77
POS	Pearson	.554**	1	.396**	.622**	-.021
	Correlation					
	Sig. (1-tailed)	.000		.000	.000	.429
	N	107	107	107	78	77
LMX	Pearson	.302**	.396**	1	.377**	-.016
	Correlation					
	Sig. (1-tailed)	.001	.000		.000	.445
	N	107	107	107	78	77
affcommit	Pearson	.516**	.622**	.377**	1	-.188
	Correlation					
	Sig. (1-tailed)	.000	.000	.000		.085
	N	78	78	78	78	55
flow betweenness ADVICE	Pearson	-.085	-.021	-.016	-.188	1
	Correlation					
	Sig. (1-tailed)	.230	.429	.445	.085	
	N	77	77	77	55	77

** . Correlation is significant at the 0.01 level (1-tailed).

Appendix C. Figures

Figure C1. Interaction Effects of Psychological Empowerment and Network Centrality on Affective Commitment

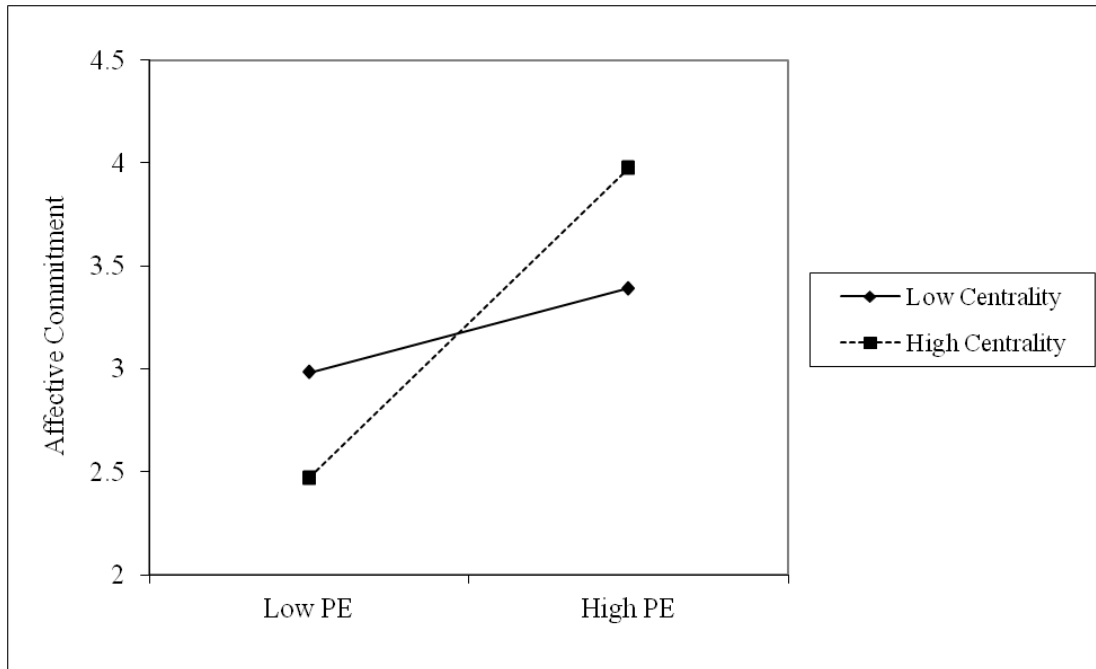


Figure C2. Interaction Effects of Leader-Member Exchange and Network Centrality on Affective Commitment

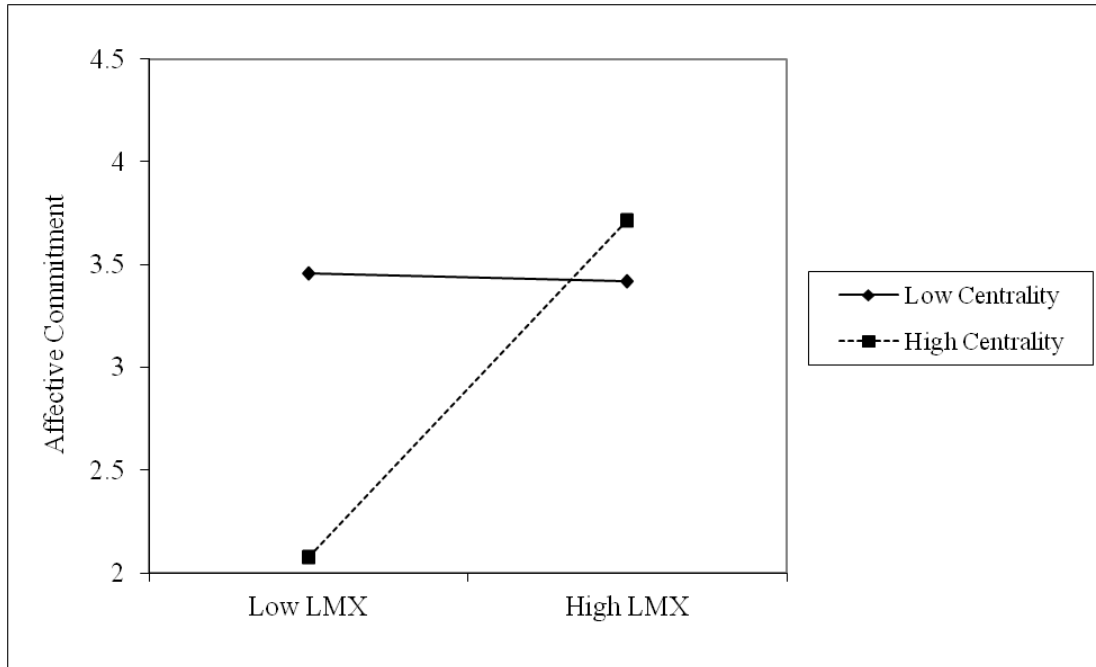
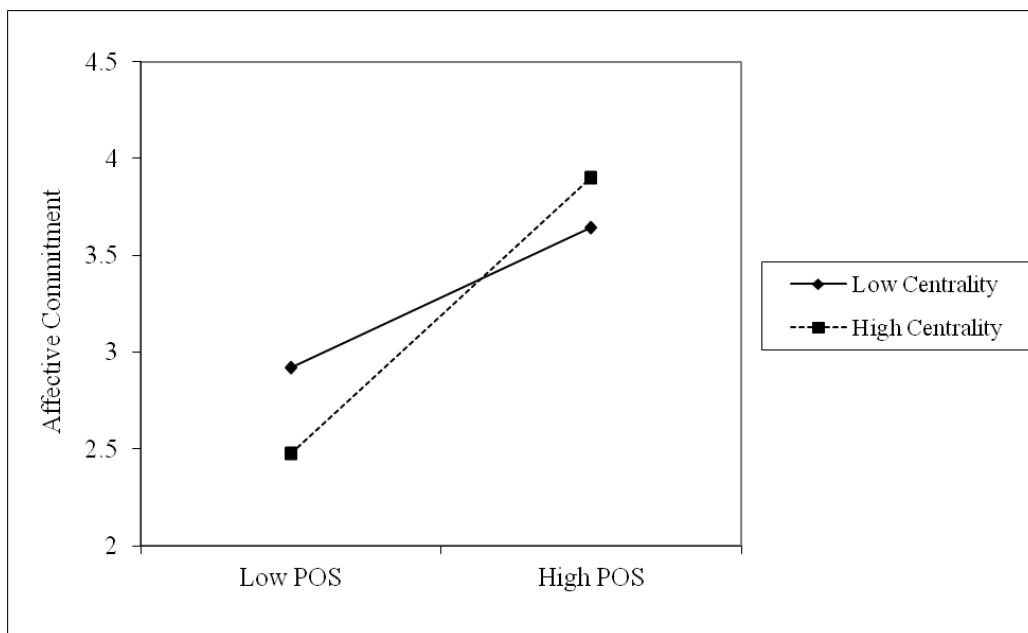


Figure C3. Interaction Effects of Perceived Organizational Support and Network Centrality on Affective Commitment



References

- Ashforth, B. E. (1989). The experience of powerlessness in organizations. *Organizational Behavior and Human Decision Processes*, 43(2), 207-242.
- Balkundi, P., & Harrison, D. A. (2006). Ties, leaders, and time in teams: Strong inference about network structure's effects on team viability and performance. *The Academy of Management Journal ARCHIVE*, 49(1), 49-68.
- Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51(6), 1173.
- Bauer, T. N., Green, S. G., & Bauer, T. N. (1996). Development of leader-member exchange: A longitudinal test. *Academy of Management Journal*, , 1538-1567.
- Blau, P. M. (1964). *Exchange and power in social life* Transaction Publishers.
- Bogler, R., & Somech, A. (2004). Influence of teacher empowerment on teachers' organizational commitment, professional commitment and organizational citizenship behavior in schools. *Teaching and Teacher Education*, 20(3), 277-289.
- Borgatti, S. P. (1995). Centrality and AIDS. *Connections*, 18(1), 112-114.
- Borgatti, S. P. (2005). Centrality and network flow. *Social Networks*, 27(1), 55-71.
- Borgatti, S. P., Everett, M. G., & Linton, C. (2002). UCINET 6 for windows. *UCINET 6 for Windows*,
- Borgatti, S. P., Everett, M. G., & Linton, C. (2008). Freeman 2002 ucinet for windows: Software for social network analysis. *Harvard, MA: Analytic Technologies*,
- Bowler, W. M., & Brass, D. J. (2006). Relational correlates of interpersonal citizenship behavior: A social network perspective. *Journal of Applied Psychology*, 91(1), 70.
- Brass, D. J., & Burkhardt, M. E. (1992). Centrality and power in organizations. *Networks and Organizations: Structure, Form, and Action*, 191, 215.
- Brass, D. J., & Krackhardt, D. (1999). The social capital of twenty-first century leaders. *Out-of-the-Box Leadership: Transforming the Twenty-First-Century Army and Other Top-Performing Organizations*, , 179-194.

- Burt, R. S. (1995). *Structural holes: The social structure of competition* Harvard University Press.
- Burt, R. S. (2005). Brokerage and closure: An introduction to social capital.
- Casciaro, T., & Lobo, M. S. (2005). Competent jerks, lovable fools, and the formation of social networks. *Harvard Business Review*, 83(6), 92-99.
- Cohen, D., & Prusak, L. (2001). *In good company: How social capital makes organizations work* Harvard Business Press.
- Colquitt, J. A., LePine, J. A., & Wesson, M. J. (2012). (3rd ed.) McGraw-Hill/Irwin.
- Crook, T. R., Todd, S. Y., Combs, J. G., Woehr, D. J., & Ketchen Jr, D. J. (2011). Does human capital matter? A meta-analysis of the relationship between human capital and firm performance. *Journal of Applied Psychology*, 96(3), 443.
- Cross, R., & Prusak, L. (2002). The people who make organizations go-or stop. *Harvard Business Review*, 80(6), 104-112.
- Deci, E. L., Connell, J. P., & Ryan, R. M. (1989). Self-determination in a work organization. *Journal of Applied Psychology*, 74(4), 580.
- Duchon, D., Green, S. G., & Taber, T. D. (1986). Vertical dyad linkage: A longitudinal assessment of antecedents, measures, and consequences. *Journal of Applied Psychology*; *Journal of Applied Psychology*, 71(1), 56.
- Eisenberger, R., Armeli, S., Rexwinkel, B., Lynch, P. D., & Rhoades, L. (2001). Reciprocation of perceived organizational support. *Journal of Applied Psychology*, 86(1), 42.
- Eisenberger, R., Huntington, R., Hutchison, S., & Sowa, D. (1986). Perceived organizational support. *Journal of Applied Psychology*, 71(3), 500-507.
- Everett, M. G., & Borgatti, S. P. (2005). Extending centrality. *Models and Methods in Social Network Analysis*, , 57-76.
- Freeman, L. C., Borgatti, S. P., & White, D. R. (1991). Centrality in valued graphs: A measure of betweenness based on network flow. *Social Networks*, 13(2), 141-154.
- Gouldner, A. W. (1960). The norm of reciprocity: A preliminary statement. *American Sociological Review*, , 161-178.

- Graen, G., & Cashman, J. F. (1975). A role making model of leadership in formal organizations: A developmental approach. *Leadership Frontiers*,
- Graen, G. B., & Scandura, T. A. (1987). Toward a psychology of dyadic organizing. *Research in Organizational Behavior*,
- Groat, M. (1997).
The informal organization: Ride the headless monster. *Management Accounting*, 75(4), 40-42.
- Hanneman, R. A., & Riddle, M. (2005). *Introduction to social network methods*.
Riverside, CA: University of California, Riverside.
- Hatala, J. P. (2006). Social network analysis in human resource development: A new methodology. *Human Resource Development Review*, 5(1), 45-71.
- Ibarra, H., & Andrews, S. B. (1993). Power, social influence, and sense making: Effects of network centrality and proximity on employee perceptions. *Administrative Science Quarterly*, , 277-303.
- Irving, P. G., & Meyer, J. P. (1994). Reexamination of the met-expectations hypothesis: A longitudinal analysis. *Journal of Applied Psychology*, 79(6), 937.
- Iverson, R. D., & Buttigieg, D. M. (2002). Affective, normative and continuance commitment: Can the 'right kind' of commitment be managed? *Journal of Management Studies*, 36(3), 307-333.
- Janssen, O. (2004). The barrier effect of conflict with superiors in the relationship between employee empowerment and organizational commitment. *Work & Stress*, 18(1), 56-65.
- Jones, C. (2004). In LAI Conference (Ed.), *Lean transformation at rockwell collins*
- Jose, P.E. (2008). *ModGraph-I: A programme to compute cell means for the graphical display of moderational analyses: The internet version, Version 2.0*. Victoria University of Wellington, Wellington, New Zealand. Retrieved [date] from <http://www.victoria.ac.nz/psyc/staff/paul-jose-files/modgraph/modgraph.php>
- Kaiser, H. F. (1974). An index of factorial simplicity. *Psychometrika*, 39(1), 31-36.
- Kanter, R. M. (1968). Commitment and social organization: A study of commitment mechanisms in utopian communities. *American Sociological Review*, , 499-517.

- Kelln, B. R., & Ellard, J. H. (1999). An equity theory analysis of the impact of forgiveness and retribution on transgressor compliance. *Personality and Social Psychology Bulletin*, 25(7), 864-872.
- Kirkman, B. L., & Rosen, B. (1999). Beyond self-management: Antecedents and consequences of team empowerment. *Academy of Management Journal*, 42(1), 58-74.
- Kleiner, A. (2002). Karen stephenson's quantum theory of trust. *The Creative Mind, Fourth Quarter*, 29, 1-14.
- Krackhardt, D. (1996). Social networks and the liability of newness for managers. *Trends in Organizational Behavior*, 3, 159-173.
- Lee, J., & Kim, S. (2011). Exploring the role of social networks in affective organizational commitment: Network centrality, strength of ties, and structural holes. *The American Review of Public Administration*, 41(2), 205-223.
- Liao, H., Toya, K., Lepak, D. P., & Hong, Y. (2009). Do they see eye to eye? management and employee perspectives of high-performance work systems and influence processes on service quality. *Journal of Applied Psychology*, 94(2), 371.
- Liden, R. C., Wayne, S. J., & Stilwell, D. (1993). A longitudinal study on the early development of leader-member exchanges. *Journal of Applied Psychology*, 78(4), 662.
- Lin, N. (1999). Building a network theory of social capital. *Connections*, 22(1), 28-51.
- Lin, N. (1982). Social resources and instrumental action. In P. V. Madsen, & N. Lin (Eds.), *Social structure and network analysis* [null] (pp. 131-145). Beverly Hills, CA: Sage.
- Mathieu, J. E., & Zajac, D. M. (1990). A review and meta-analysis of the antecedents, correlates, and consequences of organizational commitment. *Psychological Bulletin*, 108(2), 171.
- May, R. (2007). *Love and will* WW Norton & Company.
- Meyer, J. P., & Allen, N. J. (1991). A three-component conceptualization of organizational commitment. *Human Resource Management Review*, 1(1), 61-89.
- Meyer, J. P., Bobocel, D. R., & Allen, N. J. (1991). Development of organizational commitment during the first year of employment: A longitudinal study of pre-and post-entry influences. *Journal of Management*, 17(4), 717-733.

- Meyer, J. P., Stanley, D. J., Herscovitch, L., & Topolnytsky, L. (2002). Affective, continuance, and normative commitment to the organization: A meta-analysis of antecedents, correlates, and consequences. *Journal of Vocational Behavior*, 61(1), 20-52.
- Meyer, J. P., & Allen, N. J. (1987). *Organizational commitment: Toward a three-component model*. Ontario: Department of Psychology, University of Western Ontario.
- Morrison, E. W. (2002). NEWCOMERS'RELATIONSHIPS: THE ROLE OF SOCIAL NETWORK TIES DURING SOCIALIZATION. *Academy of Management Journal*, 45(6), 1149-1160.
- Mowday, R. T., Porter, L. W., & Steers, R. M. (1982). In Mowday R. T. (Ed.), *Employee-organization linkages: The psychology of commitment, absenteeism, and turnover* (Illustrated ed.). University of California: Academic Press.
- Moynihan, D. P., & Pandey, S. K. (2008). The ties that bind: Social networks, person-organization value fit, and turnover intention. *Journal of Public Administration Research and Theory*, 18(2), 205-227.
- Park, S. M., & Rainey, H. G. (2007). Antecedents, mediators, and consequences of affective, normative, and continuance commitment empirical tests of commitment effects in federal agencies. *Review of Public Personnel Administration*, 27(3), 197-226.
- Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88(5), 879.
- Randall, D. M., & O'driscoll, M. P. (1997). Affective versus calculative commitment: Human resource implications. *The Journal of Social Psychology*, 137(5), 606-617.
- Renfro, R. S. (2003). *Modeling and analysis of social networks*. (PhD, Air Force Institute of Technology).
- Rhoades, L., Eisenberger, R., & Armeli, S. (2001). Affective commitment to the organization: The contribution of perceived organizational support. *Journal of Applied Psychology*, 86(5), 825.
- Roberts, K. H., & O'Reilly III, C. A. (1979). Some correlations of communication roles in organizations. *Academy of Management Journal*, , 42-57.

- Scandura, T. A., & Graen, G. B. (1984). Moderating effects of initial leader–member exchange status on the effects of a leadership intervention. *Journal of Applied Psychology*, 69(3), 428.
- Scholl, R. W. (1981). Differentiating organizational commitment from expectancy as a motivating force. *Academy of Management Review*, , 589-599.
- Scott, J. (2000). *Social network analysis: A handbook* Sage Publications Limited.
- Sjoberg, L., Olsson, G., & Salay, F. (1983). Cathectic orientation, goal setting and mood. *Journal of Personality Assessment*, 47(3), 307-313.
- Snyder, W. M., & de Souza Briggs, X. (2004). Communities of practice: A new tool for government managers. *Collaboration: Using Networks and Partnerships*, , 171-272.
- Sparrowe, R. T., & Liden, R. C. (1997). Process and structure in leader-member exchange. *Academy of Management Review*, , 522-552.
- Sparrowe, R. T., Liden, R. C., Wayne, S. J., & Kraimer, M. L. (2001). Social networks and the performance of individuals and groups. *Academy of Management Journal*, 44(2), 316-325.
- Spreitzer, G. M. (1995). Psychological empowerment in the workplace: Dimensions, measurement, and validation. *Academy of Management Journal*, , 1442-1465.
- Spreitzer, G. M. (1996). Social structural characteristics of psychological empowerment. *Academy of Management Journal*, , 483-504.
- Thomas, K. W., & Velthouse, B. A. (1990). Cognitive elements of empowerment: An "interpretive" model of intrinsic task motivation. *Academy of Management Review*, , 666-681.
- Washington, D. (2012). *The moderating effect of psychological empowerment on the relationship between network centrality and individual job performance*. (Master's, Air Force Institute of Technology).
- Wayne, S. J., Shore, L. M., & Liden, R. C. (1997). Perceived organizational support and leader-member exchange: A social exchange perspective. *Academy of Management Journal*, , 82-111.
- Wellman, B. (1992). Which types of ties and networks provide what kinds of social support? In E. J. Lawler (Ed.), *Advances in group processes* (pp. 207-235). Greenwich, CT: JAI Press.

- West, S. G., & Aiken, L. S. (1991). *Multiple regression: Testing and interpreting interactions* Sage Publications, Incorporated.
- Wetherell, C., Plakans, A., & Wellman, B. (1994). Social networks, kinship, and community in eastern europe. *The Journal of Interdisciplinary History*, 24(4), 639-663.
- Winston, S. (2006). Informal networks within organizations: The unseen enemy of the unaccessed friend. *The John Ben Shepperd Journal of Practical Leadership*, 1(1), 121-129.

REPORT DOCUMENTATION PAGE				Form Approved OMB No. 074-0188	
<p>The public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of the collection of information, including suggestions for reducing this burden to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports (0704-0188), 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.</p> <p>PLEASE DO NOT RETURN YOUR FORM TO THE ABOVE ADDRESS.</p>					
1. REPORT DATE (DD-MM-YYYY) 21-03-2013		2. REPORT TYPE Master's Thesis		3. DATES COVERED (From – To) March 2011 – March 2013	
TITLE AND SUBTITLE The Moderating Effect of Network Centrality on the Relationship Between Work Experience Variables and Organizational Commitment				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S) Kaspari, Luke M., 1 Lt, USAF				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAMES(S) AND ADDRESS(S) Air Force Institute of Technology Graduate School of Engineering and Management (AFIT/ENY) 2950 Hobson Way, Building 640 WPAFB OH 45433-8865				8. PERFORMING ORGANIZATION REPORT NUMBER AFIT-ENV-13-M-11	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) INTENTIONALLY LEFT BLANK				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT DISTRIBUTION STATEMENT A: APPROVED FOR PUBLIC RELEASE; DISTRIBUTION IS UNLIMITED.					
13. SUPPLEMENTARY NOTES This material is declared a work of the U.S. Government and is not subject to copyright protection in the United States.					
14. ABSTRACT The purpose of this research was to identify the effect of an individual's network position on the relationship between work experience variables and affective commitment. This study tested three hypotheses, which were introduced through a comprehensive literature review, regarding the relationships between work experience variables and affective commitment. Research has indicated linkages between social network centrality and organizational commitment; however, the specific effects of centrality remain unclear. Therefore, this research developed and tested a moderation model to identify relationships between network centrality, affective commitment, and three work experience variables: psychological empowerment (PE), leader-member exchange (LMX), and perceived organizational support (POS). The moderation results suggest that network centrality significantly influences the relationship between PE and AC as well as POS and AC. While there was an indication that network centrality also influences the LMX – AC relationship, the results shown in this study were found to be insignificant.					
15. SUBJECT TERMS Affective Commitment, Informal Social Networks, Centrality, Psychological Empowerment, Leader-Member Exchange, Perceived Organizational Support					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT UU	18. NUMBER OF PAGES 65	19a. NAME OF RESPONSIBLE PERSON John J. Elshaw, Lt Col, Ph.D. USAF
a. REPORT U	b. ABSTRACT U	c. THIS PAGE U			19b. TELEPHONE NUMBER (Include area code) (937) 255-6565, ext 7402 (john.elshaw@afit.edu)

Standard Form 298 (Rev. 8-98)
Prescribed by ANSI Std. Z39-18